

CLAIMS

1. A method for manufacturing a regular polyhedral ornament such as a regular dodecahedron or a regular icosahedron, the method comprising: shaping a stone into a cube in preparation for a raw workpiece; and cutting the cubic workpiece using a cutting tool into the regular polyhedron that is inscribed in the cube,

the method being characterized by:

marking six external surfaces of the cube with cutting base lines which define faces determined by geometric features of the regular polyhedron and ridges forming contours of the faces;

cutting first and second faces of the regular polyhedron which have the ridges in common based on the cutting base lines;

marking auxiliary cutting lines by drawing on these faces;

cutting a new third regular polyhedral face based on the auxiliary cutting lines and the cutting base lines; and

drawing auxiliary cutting lines in sequence every time a new face of the regular polyhedron is cut from fourth to 12th or to 20th faces to thereby cut the cubic workpiece into the regular polyhedron.

2. A method for manufacturing a regular polyhedral ornament, the method comprising: shaping a stone into a cube

in preparation for a raw workpiece; and cutting the cubic workpiece using a cutting tool into a regular polyhedron that is inscribed in the cube,

the method being characterized by:

5 marking six external surfaces of the cube with cutting base lines which define faces obtained from the geometric features of the regular polyhedron and ridges forming the contours of the faces;

cutting first and second possible cut faces, which are
10 envisaged in an inner space of the cube, using the cutting tool into first and second faces adjacent to each other based on the cutting base lines which commonly include any one of the ridges;

marking lines forming ridges of the regular polyhedron
15 determined by intersections of the cutting base lines and the faces having been cut by drawing as auxiliary cutting lines on both the first and second faces having been cut;

with a new face envisaged in the inner space of the cube being defined as a third possible cut face based on these
20 auxiliary cutting lines and the cutting base lines, cutting the third possible cut face using the cutting tool so as to be formed as a third face of the regular polyhedron; and

drawing auxiliary cutting lines every time a new face is created by cutting in sequence, to form a possible cut face,
25 thereby allowing the cubic workpiece to be cut into the

regular polyhedral ornament.

3. The method for manufacturing a regular polyhedral ornament according to claim 2, wherein:

the regular polyhedron is a regular dodecahedron, which
5 is assumed to have an edge of a length of two;

on each surface of the cubic workpiece, a midpoint and two division points located about the midpoint at a distance of $(1 + \sqrt{5})/2$ from each vertex are plotted on each of the four perimeter edges or ridges; and

10 the cutting base lines marked on each surface based on the geometric features include: a median line which connects between the midpoints on an edge and the opposite edge; two parallel lines which are orthogonal to the median line and which connect respectively between two division points located
15 on respective edges adjacent to the edge and the opposite edge; and four diagonal lines which are diagonal to the parallel lines and which respectively connect between each of the division points on the edge and the opposite edge and each of the midpoints on the respective adjacent edges.

20 4. The method for manufacturing a regular polyhedral ornament according to claim 2, wherein:

the regular polyhedron is a regular icosahedron, which is assumed to have an edge of a length of $(1 + \sqrt{5})$;

on each surface of the cubic workpiece, a midpoint and
25 two division points located about the midpoint at a distance

of one from each vertex are plotted on each of the four
perimeter edges or ridges; and

the cutting base lines marked on each surface based on
the geometric features include: a median line which connects
5 between midpoints on an edge and the opposite edge; two
parallel lines which are orthogonal to the median line and
which connect respectively between two division points located
on the respective edges adjacent to the edge and the opposite
edge; and four diagonal lines which are diagonal to the
10 parallel lines and which respectively connect between each of
the division points on the edge and the opposite edge and each
of the midpoints on the respective adjacent edges.

5. An ornament characterized in that the cubic workpiece
of stone is shaped into a regular dodecahedron or a regular
15 icosahedron according to the method for manufacturing a
regular polyhedron according to claim 3 or 4.